

REMARKS

This correspondence is filed in response to the Office Action mailed January 12, 2007.

The Examiner continues to reject Claims 55, 57-59, 88 and 89 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over *Kain, Jr. et al.* (6,180,206). Applicants amend Claims 55, 88 and 89 to further clarify Applicants' claimed invention.

Applicants amend Claims 55, 88 and 89 to clarify that the stiffness-treated fabric precursor is polymerized, and then the fabric is directly impregnated with the curable resin to form an uncured stiffness-treated prepreg ply. This is disclosed for example in Example 1. As such, *Kain Jr.* does not disclose or motivate Applicants' claimed invention.

Applicants also amend Claims 55, 88 and 89 to clarify the claimed invention as comprising an uncured stiffness-treated prepreg prepared prior to contact with the honeycomb core, such that it is not the result of contacting a fabric with an adhesive layer during layup as the Examiner asserts *Kain, Jr.* discloses. Applicants disclosed this for example in Example 3; "prepreg ply" means a resin-impregnated fabric." Page 34, lines 5-6.

Applicants respectfully urge that *Kain, Jr.* does not anticipate or motivate Applicants' claimed invention and request withdrawal of the Examiner's rejection placing the application in order for allowance.

Rejection Under 35 U.S.C. § 102(e) and 103(a)

The Examiner rejects Claims 55, 57-59, 88 and 89 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over *Kain, Jr. et al.* (6,180,206).

The Examiner previously asserted that the properties of Applicants' invention are inherent in *Kain, Jr.* In particular, the Examiner stated that it is generally known in the art that "prepreg plies are produced by partially curing the polymer coating, i.e., treating

the fabric, to reach a stage-B condition.” The Examiner appears to continue the premise of this assertion.

The Examiner cites *Kain, Jr.* (col. 5, lines 29-31) as having a bismaleimide impregnated prepreg that relates to the type of polymerizable resin capable of use in Applicants’ claimed invention. However, the precursor on the fabric of the present invention is polymerized before impregnating the stiffness-treated fabric with a curable resin. That polymerized precursor distinguishes Applicants’ claimed invention over the *Kain, Jr.* disclosure. The resulting stiffness-treated fabric has an increased stiffness value as claimed, prior to impregnating with any curable resin, and prior to any pre-cure of the curable resin to reach “a stage-B condition” as described by the Examiner. As such, Applicants’ claimed not less than 7% greater ASTM stiffness value of the stiffness-treated fabric is not inherent in the prior art or anticipated by *Kain, Jr.*

Furthermore, Applicants’ frictional resistance limitation is to an uncured stiffness-treated prepreg ply, before any curing including to reach “a stage-B condition.” It is this increased frictional resistance over untreated prepregs that limits movement of the honeycomb sandwich structure during initial heating of the cure cycle, including to reach “a stage-B condition,” which reduces core crush. As such, Applicants’ claimed stiffness-treated prepreg ply has greater frictional resistance than the inherent frictional resistance of the prior art prepreg plies, and the prior art does not anticipate or motivate this increased frictional resistance.

It is further claimed that the curable resin system is applied directly to the stiffness-treated fabric to form the stiffness-treated prepreg prior to contacting with the honeycomb core. As such, the prepreg plies plus adhesive and honeycomb core of *Kain, Jr.* do not anticipate this claim limitation.

Therefore, Applicants assert that the stiffness value and frictional resistance of Applicants’ invention are not inherent in *Kain, Jr.* and the rejection should be withdrawn.

It is significant that Applicants’ claimed stiffness-treated fabric has a fully polymerized precursor coating on the fabric prior to impregnation with the curable resin system to form the uncured stiffness-treated prepreg ply. This uncured stiffness-treated prepreg ply is what possesses the claimed increased frictional resistance over prepregs where a precursor is not polymerized, which is the focus of the present invention. The

result is an uncured stiffness-treated prepreg ply that has only a single reactive resin system available during the cure of the honeycomb sandwich structure precursor, and the stiffness-treated prepreg functions to eliminate slippage between prepreg plies that reduces core crush during the initial stages of heating of the honeycomb structure during the cure cycle.

As such, Applicants respectfully request the Examiner withdraw the rejections and allow the application.

It is respectfully submitted that the prepreg of a honeycomb sandwich structure precursor of the present invention as claimed by Applicants is patentable and not anticipated or motivated by *Kain, Jr.* It is submitted that Claims 55, 57-59, 88 and 89 define a patentable invention and prompt allowance is sought. Please direct any questions to the undersigned attorney at (714) 666-4396.

The Commissioner is hereby authorized to charge any additional fees associated with this paper or during the pendency of this application, or credit any overpayment, to Deposit Account No. 03-4083.

Respectfully submitted,



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Dated: July 11, 2007

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